

SEQUENCE OF OPERATION

INITIAL CONDITIONS:  
ALL 12VDC AND 120VAC POWER SECURED. ALL RELAYS SHOWN DE-ENERGIZED.

SEQUENCE:  
OPEN FIELD SERVICE DISCONNECT SWITCHES (G6, H7) TO MAIN LIGHT LAMPCHANGER.  
LOAD LAMPCHANGER WITH APPLICABLE LAMPS AND COCK LAMPCHANGER TO PUT THE PRIMARY LAMP IN POSITION AS THE OPERATING LAMP.  
CLOSE SERVICING DISCONNECT SWITCHES TO MAIN LIGHT LAMPCHANGER.  
ENERGIZE ALL 12VDC LIGHT CONTROL CIRCUIT BY CLOSING 1CB9 (E2) BATTERY POWER; 1CB15 (E3), AVC; AND CB IN MAIN 12VDC DISTRIBUTION PANEL.  
ENERGIZE ALL 120VAC LIGHT POWER CIRCUITS BY CLOSING CB4 (J1) AVC POWER IN THE MAIN 120VAC DISTRIBUTION PANEL, AND 1CB3 (I1) LIGHT.  
WHEN TIME DELAY RELAY 1RY4 (I2) TIMES OUT, 1RY4 CONTACT (B5) OPENS PROVING AN AUTOMATIC POWER RESET TO THE NAVAID SENSOR MODULE. THIS DELAY ASSURES THAT ALL 120VAC POWERED EQUIPMENT HAS HAD TIME TO STABILIZE.  
NAVAID SENSOR MODULE K1 (E5) CONTACTS CLOSE TO ENERGIZE 1RY6 (E7). CONTACT 1RY6 (G3) PROVIDE POWER FOR MAIN LIGHT THROUGH 1RY7 CONTACTS (G3). A SET OF 1RY6 CONTACTS (D5) ACROSS SS ON 1FL1 FLASHER OPEN TO ACTIVATE THE 1FL1 FLASHER. THE +12VDC OUTPUT PULSES AT THE FLASHER L TERMINAL ALTERNATELY ENERGIZES AND DEENERGIZES RELAYS 1RY7 (MAIN LIGHT).  
CURRENT SENSOR 1CD1 DETECTS THE CURRENT FLOW TO THE LAMP AND CLOSSES ITS INTERNAL SWITCH WHEN THE CURRENT FLOW IS GREATER THAN ITS PRESET THRESHOLD CURRENT.  
THE SERIES CIRCUIT CONTAINING 1CD1 CONTACT (G4) PROVIDES A PULSATING 12VDC GROUND TO THE NAVAID SENSOR CARD CHANNEL #1 (F11).  
IF THE TIME INTERVAL BETWEEN PULSATIONS EXCEEDS 1.5 TIMES THE TIME FOR ONE CHARACTERISTIC PERIOD OF THE MAIN LIGHT FOR ANY REASON, THE NAVAID SENSOR MODULE ACTIVITY CHANNEL #1 SENSES IMPROPER OPERATION AND OPENS K1 (E5) AND K2 (C8) CONTACTS.  
OPENING K1 CONTACT DE-ENERGIZES 1RY6 (D7), OPENING 1RY6 TO DE-ENERGIZE THE MAIN LIGHT.  
OPENING K2 CONTACTS DE-ENERGIZES 1RY2 (C6), CLOSING 1RY2 (C5) CONTACT TO ENERGIZE THE EMERGENCY LIGHT.  
THE DC CURRENT PULSES TO THE EMERGENCY LIGHT ARE SENSED BY THE DC CURRENT DETECTOR (C6) WHOSE S1 CONTACT CLOSSES EACH TIME THE EMERGENCY LIGHT FLASHES. THESE PULSATIONS ARE FED TO THE NAVAID SENSOR MODULE (B3) EM CHANNEL WHICH MONITORS THE EMERGENCY LIGHT IN THE SAME MANNER THE MAIN LIGHT IS MONITORED.  
THE MAIN LIGHT LAMPCHANGER POSITION IS INDICATED BY SIGNAL FROM THE LAMPCHANGER WHICH ENERGIZES 1RY1 (I8) AFTER LAMPCHANGER ROTATES TO ENERGIZE ITS SECONDARY LAMP CIRCUIT. THIS CAUSES 1RY1 CONTACTS (B5) TO CLOSE AND THEREFORE GROUND THE NAVAID SENSOR MODULE L/C, LAMPCHANGER MONITORING TERMINAL.  
THE MAIN LIGHT LAMPCHANGER OPERATES AS FOLLOWS: WHEN THE PRIMARY LAMP BURNS OUT, THE SR RELAY IS DE-ENERGIZED, CLOSING ITS SR CONTACTS TO ENERGIZE ITS TRIP SOLENOID COIL. THIS RELEASES THE SPRING LOADED LAMPCHANGER WHICH ROTATES TO DISCONNECT THE BURNED OUT PRIMARY LAMP AND CONNECT THE SECONDARY LAMP.

NOTES:

- TB-601 LOCATED IN NAVAID SENSOR PANEL. ALL OTHER PARTS LOCATED INSIDE AVC UNLESS NOTED.
- THIS LAMPCHANGER MUST BE EQUIPPED WITH ARC SUPPRESSION AND MONITOR TERMINAL MODIFICATION KIT (PART #9284X).
- THIS SWITCH RESETS THE NAVAID SENSOR MODULES MANUALLY, OTHERWISE IT PERFORMS THE SAME FUNCTION AS 1RY4 CONTACT (B5) AS DESCRIBED IN THE SEQUENCE OF OPERATION. THE RESET FUNCTION CLOSSES K1 AND K2 CONTACTS.
- SEE AVC FIELD CHANGE #3 FOR MAIN LIGHT CURRENT SENSOR INSTALLATION AND SET UP.

C	3/99	HRC	ADD FIELD CHANGE #3 TO AVC AND DELETE NOTE 4.	STN
B	10/77	HRC	REMOVED SIMMER CIRCUIT, ADDED NOTES 3 & 4.	RAD
A	2/77	CWS	LAMPCHANGER MODIFICATION: REMOVED BALLAST CIRCUIT.	RAD
REV.	DATE	APPR.	DESCRIPTION	BY
DESIGNED:	RAD	U.S. COAST GUARD HEADQUARTERS		
DRAWN:		CIVIL ENGINEERING		
TRACED:		STANDARD AID TO NAVIGATION		
CHECKED:	R.A.DOUGHTY	FLASHED OPTIC		
REVIEWED BY:	W.B. WAFF	<1000 WATT> WITH EMERGENCY LIGHT		
CH ELEC SECT		TROUBLE SHOOTING DIAGRAM		
REVIEWED BY:	H.R.CLEVELAND			
CH SYS SECT				
REVIEWED BY:	C.W.SCHECK	APPROVED:	K. D. URFER	DATE
CH SUP EQ BR		CHIEF OF DIVISION		
UNLESS OTHERWISE SPECIFIED:			DRAWING NUMBER	REV.
ALL DIMENSIONS ARE IN INCHES.			130705	C
TOLERANCES: DIM.			SCALE: NONE	SHEET 1 OF 1
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